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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/734,959

12/12/2003

Tin-Fook Ngai

20002/17846

4798

75343 7590 02/24/2009  
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EXAMINER

DAO, THUY CHAN

ART UNIT

PAPER NUMBER

2192

MAIL DATE

DELIVERY MODE

02/24/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Advisory Action</b> <b>Before the Filing of an Appeal Brief</b>	<b>Application No.</b> 10/734,959	<b>Applicant(s)</b> NGAI ET AL.	
	<b>Examiner</b> Thuy Dao	<b>Art Unit</b> 2192	

**--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

THE REPLY FILED 19 January 2009 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☐ The period for reply expires \_\_\_\_\_ months from the mailing date of the final rejection.  
 b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on \_\_\_\_\_. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

#### AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because  
 (a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);  
 (b) ☐ They raise the issue of new matter (see NOTE below);  
 (c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or  
 (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).  
 5. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.  
 6. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).  
 7. ☒ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.  
 The status of the claim(s) is (or will be) as follows:  
 Claim(s) allowed: \_\_\_\_\_.  
 Claim(s) objected to: \_\_\_\_\_.  
 Claim(s) rejected: 1-10,12-19,21-27 and 29-33.  
 Claim(s) withdrawn from consideration: \_\_\_\_\_.

#### AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).  
 9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).  
 10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

#### REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because:  
See Continuation Sheet.  
 12. ☐ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). \_\_\_\_\_.  
 13. ☐ Other: \_\_\_\_\_.

/Tuan Q. Dam/  
 Supervisory Patent Examiner, Art Unit 2192

Continuation of 11. does NOT place the application in condition for allowance because:

a) The Applicants stated, "Speculative storage overflow occurs when the speculative state of Kim et al. build up an excess capacity of storage, which is more fairly construed as a management/maintenance consideration rather than a concept related to misspeculation." (Remarks, page 12, last three lines).

The examiner respectfully disagrees. As also expressed in Applicants' statements above, Kim indeed discloses a built up speculative state (a misspeculation cost value) and when said built up speculative state exceeds (too big/high misspeculation cost value) capacity of storage then "storage overflow occurs" (page 10, first three paragraphs and further in page 11, Algorithm 1, Selecting Explicit/Implicit Thread Execution Mode, wherein implicit/speculative threads are selected based on storage overflow against 4K direct-mapped cache).

b) The Applicants stated, "...For example, unlike a misspeculation cost value, Kim et al. describe that, in the event of detection of speculative storage overflow (a maintenance consideration) the compiler chooses explicit thread execution to avoid a processor stall condition" (page 13, first paragraph).

The examiner respectfully disagrees. As acknowledged by the Applicants in the statement above, a speculative storage overflow leads to a processor stall condition (which may be up to "several hundred cycles", page 10, third paragraph). That is to say, the plain language of claims "speculative cost value" does not exclude the built up speculative state value causing the "speculative storage overflow" (page 10, third paragraph, several hundred cycles to recover as a result of misspeculation).

c) The Applicants further stated, "...As recited in claim 1, the term 'misspeculation' includes the modifier 'mis,' which should not be ignored if the claims are to be properly examined. Additionally, unlike the base-term "speculation," the specific modifier 'mis' and the term 'misspeculation' are clearly defined by the applicants in, at least, paragraph [0033] of the specification, which is unrelated to speculatively written values, storage overflow, and/or maintenance costs associated with the overheads described by Kim et al." (Remarks, page 14, first paragraph).

The examiner respectfully disagrees. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the specific modifier "mis" and the term "misspeculation" are "defined in ... paragraph [0033] of the specification") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In the instance case, the term "misspeculation cost value" does not exclude "built up speculative state" and when said "built up speculative state" exceeds (too big misspeculation cost value) capacity of storage then "storage overflow occurs" as taught by Kim, wherein the "resulting speculative storage overflow can stall the processor execution for several hundred cycles" (page 10, third paragraph, several hundred cycles to recover as a result of misspeculation).

Furthermore, the plain language of claims merely recites "selecting a set of speculative parallel threads from the set of speculative parallel thread candidates based on the misspeculation cost value" (claim 1, lines 5-6), which does not exclude the step of selecting is based on said misspeculation cost value higher or lower some threshold (such as the capacity 4K of the direct-mapped cache, page 11, example of the thread selection decision in Figure 5).

In the instant case, Kim explicitly teaches:

a speculative storage as a 4K direct-mapped cache (page 11, Figure 5 and related text);  
speculative storage overflow "occurs when the speculative state (all speculatively written values) built up ... exceeds the capacity of the speculative storage" (such as the 4K direct-mapped cache, see page 10, first paragraph and further in page 10, third paragraph, several hundred cycles to recover as a result of misspeculation);  
executing loops of "L" (page 10, second paragraph), based on a misspeculation cost value (built up speculative state does not exceed the capacity 4K of the speculative storage), selecting said implicit/speculative parallel thread candidate (page 10, third paragraph, section "Speculative storage overflow", i.e., only selecting implicit/speculative parallel threads whose their built up speculative states do not exceed the capacity 4K).

d) Dependent claims 2-10 and 12-18 are also rejected based on virtue of their dependencies on the rejected base claim 1.

e) Independent claims 19, 24 and 31 are also rejected for reasons similar to those set forth in the Office action and paragraphs (a) and (b) above.

f) Independent claim 33 is also rejected for reasons similar to those set forth in the Office action and paragraphs (a) and (b) above.